

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE APPLICATION OF: Katsumi WATANABE, et al.

SERIAL NO: New Application

GAU:

FILED: Herewith

EXAMINER:

FOR: HIGH PRESSURE PROCESSING APPARATUS

INFORMATION DISCLOSURE STATEMENT UNDER 37 CFR 1.97

COMMISSIONER FOR PATENTS
ALEXANDRIA, VIRGINIA 22313

SIR:

Applicant(s) wish to disclose the following information.

REFERENCES

- ☒ The applicant(s) wish to make of record the references listed on the attached form PTO-1449. Copies of the listed references are attached, where required, as are either statements of relevancy or any readily available English translations of pertinent portions of any non-English language references.
- ☐ A check is attached in the amount required under 37 CFR §1.17(p).

RELATED CASES

- ☐ Attached is a list of applicant's pending application(s) or issued patent(s) which may be related to the present application. A copy of the patent(s), together with a copy of the claims and drawings of the pending application(s) is attached along with PTO 1449.
- ☐ A check is attached in the amount required under 37 CFR §1.17(p).

CERTIFICATION

- ☐ Each item of information contained in this information disclosure statement was first cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this statement.
- ☐ No item of information contained in this information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application or, to the knowledge of the undersigned, having made reasonable inquiry, was known to any individual designated in 37 CFR §1.56(c) more than three months prior to the filing of this statement.

DEPOSIT ACCOUNT

- ☒ Please charge any additional fees for the papers being filed herewith and for which no check is enclosed herewith, or credit any overpayment to deposit account number 15-0030. A duplicate copy of this sheet is enclosed.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.


C. Irvin McClelland

Registration No. 21,124

James D. Hamilton
Registration No. 28,421



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FILED: Herewith

FOR: HIGH-PRESSURE PROCESSING APPARATUS

STATEMENT OF RELEVANCY

Reference AA (5,898,727) of Form PTO-1449:

The above reference is explained in the specification.

Reference AO (2001-250821) of Form PTO-1449:
explained in the specification

PROBLEM TO BE SOLVED: To soak a semiconductor wafer by means of a fan while the dust contamination on the wafer is prevented.

SOLUTION: A high-temperature high-pressure treatment device which treats the semiconductor wafer in a high-temperature high-pressure gas atmosphere is provided with a pressure vessel in which the semiconductor wafer is housed, a heater which heats the wafer in the vessel, and a fan which agitates a gas in the pressure vessel by causing a gas flow along the wafer. The treating device is also provided with a filter which catches dust at a position on the upstream side of the wafer in the gas flow.

Reference AP (2001-280856) of Form PTO-1449:

explained in the specification

PROBLEM TO BE SOLVED: To provide a surely enclosed compact pressure processing system in which a sample can be taken in and out by a convenient method because a lower cover can be applied removably without turning or sliding a press frame.

SOLUTION: The pressure processing system comprises a processing container 1 having an opening 1A through which at least a sample (article to be processed) is placed or taken out, a releasable cover body 2 for closing the opening 1A of the processing container 1, and a press frame 3 having an inner central space 3A. Upper and lower ends on the processing container 1 side engage with the upper and lower carrying parts 3B, 3C in the central space 3A, and an axial force acting in the axial direction of the container is received by the press frame 3 during pressure processing. A body 6 for receiving the axial force through the press frame 3 between the facing parts on the cover 2 side and the lower carrying part 3C side of the press frame 3 is provided movably in the horizontal direction. Furthermore, a cover elevating/ lowering means 7 is provided in order to move the cover body 2 up and down along the axial direction of the container, under a state where the pressure receiving body 6 is spaced apart from between the facing parts, thus closing/opening the opening 1A.

Reference AQ (7-502376) of Form PTO-1449:

explained in the specification

In order to subject a workpiece, such as a semiconductor wafer, to elevated pressures the workpiece is enclosed in a void (16) between two enclosure parts (6, 7) which have been forced together by upper and lower actuators (12, 13). The enclosure parts (6, 7) are themselves enclosed in a vacuum chamber (1) evacuable by a vacuum pumping system. Gas is then supplied from a suitable pressure source via a pipe (17) into void (10), thereby to subject the workpiece to elevated pressure. Heating means may be provided to permit the workpiece to be subject to elevated temperature.

Reference AR (10-335408) of Form PTO-1449:

explained in the specification

PROBLEM TO BE SOLVED: To provide a press-treating device which can carry in/out wafers to/from a pressure vessel by providing a handling robot which can carry in/out platy objects in to/from a treating chamber in a state where a dividing section is separated.

SOLUTION: The downward movement of a lower container constituting member 3 is once stopped in a state where the member 3 descends and the front end of the arm of a wafer handling robot 8 just enters the gap between the lower surface of an Si wafer A and an Si wafer supporting base. Then the arm of the robot 8 is inserted under the Si wafer A. When the member 3 again moves downward, the wafer A is put on the hand section of the robot 8. In such a state, the wafer A is taken out by pulling out the robot 8 from a pressure vessel. When the Si wafer A is set in the pressure vessel, the above-mentioned operations are performed reversly. It is not required to provide any actuator in the pressure vessel.

Reference AS (2001-96103) of Form PTO-1449:

PROBLEM TO BE SOLVED: To provide a pressure treatment apparatus enabling particle-free treatment and capable of enhancing temp. control accuracy and temp. control response indispensable to the enhancement of productivity.

SOLUTION: A pressure container is equipped with a cylinder closed at one end thereof and the lid member for closing the opening of the other end of the cylinder and a pressure means for pressing the lid member to the cylinder in the axial direction of the cylinder is provided to the pressure container and a seal member is provided between the opening end surface of the cylinder and the end surface opposed to the opening end surface of the cylinder of the lid member. A partition wall housing an object to be treated is provided in the pressure container and a fluid introducing passage is provided to the pressure container so as to allow the greater part of the fluid flowing in the pressure container to flow in the partition wall. A partition wall comprising a heat insulating material is provided between the object to be treated and the pressure container and a filter for catching ultrafine particles is arranged on the inflow side of the fluid of the partition wall.

Reference AT (11-87306) of Form PTO-1449:

explained in the specification

PROBLEM TO BE SOLVED: To enable uniform cleaning, etching, development and drying processing with a supercritical liquid in the same reaction bath, by connecting a supercritical liquid supply unit with a stirring reaction bath and carrying out supercritical drying in the same bath.

SOLUTION: When an etching solution and a developer solution are introduced from a liquid tank 6 into a reaction bath 1 for setting a substrate 7 after cleaning, the inner liquid is prevented from staying at a particular part by a rotating mechanism 10, and uniform cleaning and development can be carried out. After a rinse solution is introduced from the liquid tank 6 and rinse processing is carried out, a supercritical liquid is fed from a gas cylinder 3 while the rinse solution is emitted. Thus, the rinse solution is replaced by the supercritical liquid. The supercritical liquid can be adjusted by compressing liquid carbon dioxide filled in the gas cylinder 3 and heating the compressed liquid carbon dioxide by a heater 5. After the liquid carbon dioxide is introduced and sufficiently replaces the rinse solution, the inside of the reaction bath 1 is heated to 31.4 deg.C or higher and the internal pressure is set at 70 atm. Thus, the carbon dioxide falls into a critical state. After that, the gas is emitted.

Form PTO 1449 (Modified)		U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE		ATTY DOCKET NO. 240422US3		SERIAL NO. New Application	
LIST OF REFERENCES CITED BY APPLICANT				APPLICANT Katsumi WATANABE, et al.			
				FILING DATE Herewith		GROUP	
U.S. PATENT DOCUMENTS							
EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE IF APPROPRIATE
	AA	5,898,727	04/27/99	Takao FUJIKAWA, et al.			
	AB						
	AC						
	AD						
	AE						
	AF						
	AG						
	AH						
	AI						
	AJ						
	AK						
	AL						
	AM						
	AN						
FOREIGN PATENT DOCUMENTS							
		DOCUMENT NUMBER	DATE	COUNTRY	TRANSLATION YES NO		
	AO	2001-250821	09/14/01	Japan		X	
	AP	2001-280856	10/10/01	Japan		X	
	AQ	7-502376	03/09/95	Japan		X	
	AR	10-335408	12/18/98	Japan		X	
	AS	2001-96103	04/10/01	Japan		X	
	AT	11-87306	03/30/99	Japan		X	
	AU	9-292181	11/11/97	Japan (with English abstract, corresponding to U.S Patent No. 5,898,727)		X	
	AV						
OTHER REFERENCES (Including Author, Title, Date, Pertinent Pages, etc.)							
	AW						
	AX						
	AY						
	AZ					<input type="checkbox"/> Additional References sheet(s) attached	
Examiner					Date Considered		
*Examiner: Initial if reference is considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.							